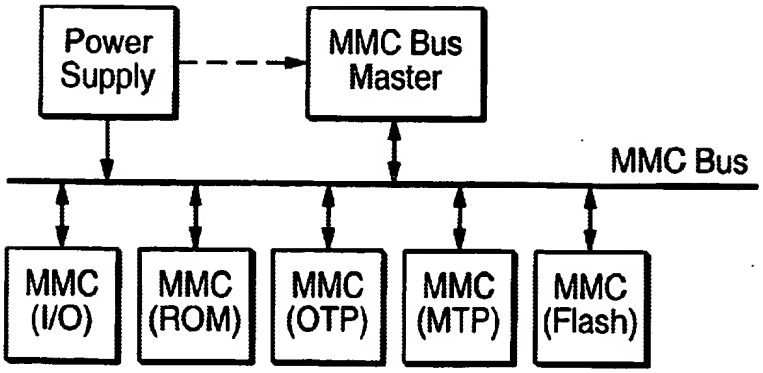

FIG._1 *(PRIOR ART)*

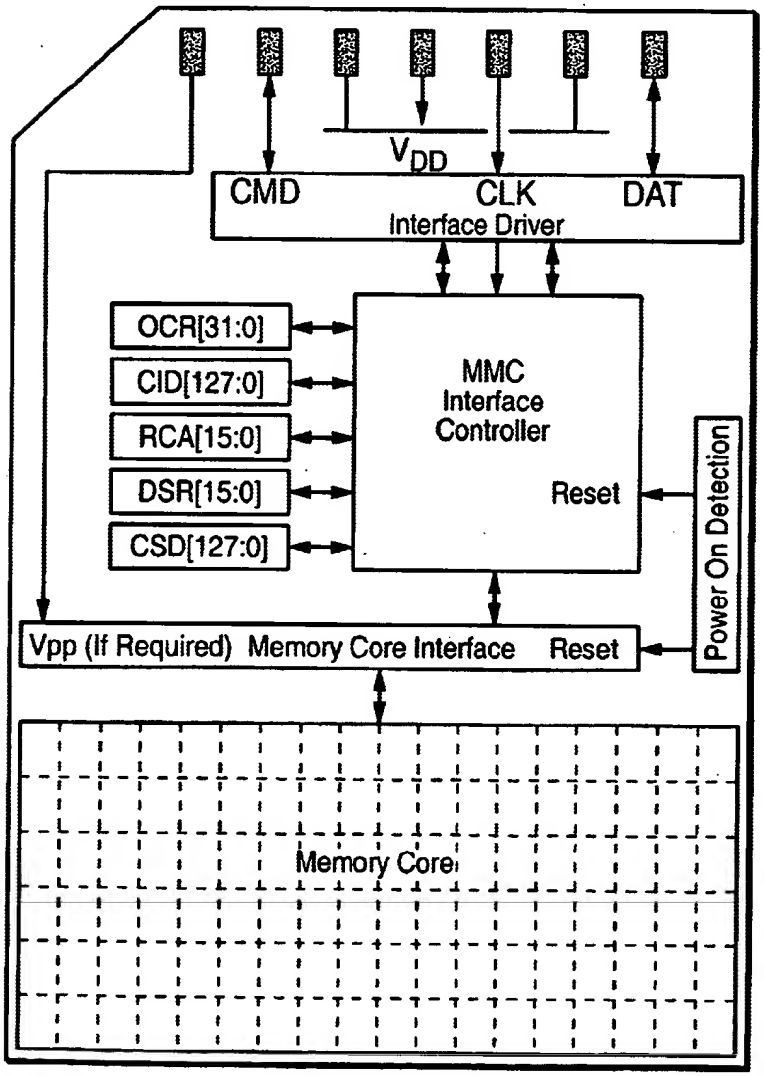

FIG._2 *(PRIOR ART)*

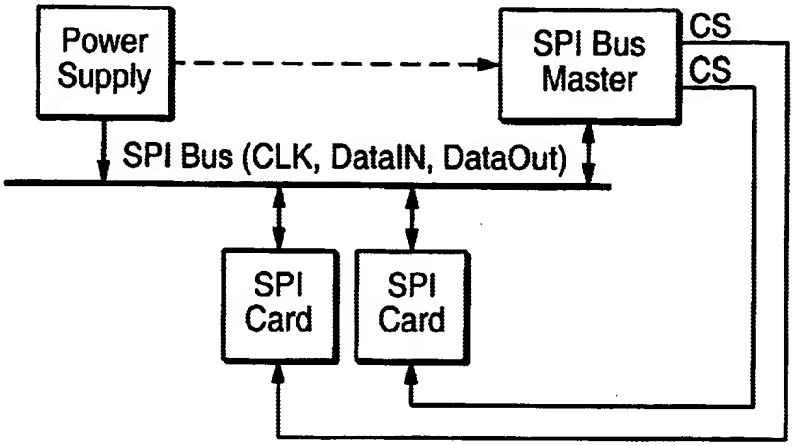

FIG._3

Pin #	MMC			SPI		
	Name	Type[1]	Description	Name	Type	Description
1	RSV	NC	Reserved For Future Use	CS	I	Chip Select (Neg True)
2	CMD	I/O/PP/OD	Command/ Response	DI	I/PP	Data In
3	V_{SS1}	S	Supply Voltage Ground	VSS	S	Supply Voltage Ground
4	V_{DD}	S	Supply Voltage	VDD	S	Supply Voltage
5	CLK	I	Clock	SCLK	I	Clock
6	V_{SS2}	S	Supply Voltage Ground	VSS2	S	Supply Voltage Ground
7	DAT	I/O/PP	Data	DO	O/PP	Data Out

FIG._4

OCR Bit Position	VDD Voltage Window
0-7	Reserved
8	2.0-2.1
9	2.1-2.2
10	2.2-2.3
11	2.3-2.4
12	2.4-2.5
13	2.5-2.6
14	2.6-2.7
15	2.7-2.8
16	2.8-2.9
17	2.9-3.0
18	3.0-3.1
19	3.1-3.2
20	3.2-3.3
21	3.3-3.4
22	3.4-3.5
23	3.5-3.6
24-30	Reserved
31	Card Power Up Status Bit (Busy)[1]

FIG._5
(PRIOR ART)

Name	Field	Width	CID-slice
Manufacturer ID	MID	24	[127:104]
Card Individual Number	CIN	96	[103:8]
CRC7 Checksum	CRC	7	[7:1]
Not Used, Always '1'	–	1	[0:0]

FIG._6
(PRIOR ART)

Name	Field	Width	Cell Type	CSD-slice
CSD Structure	CSD_STRUCTURE	2	R	[127:126]
MMC Protocol Version	MMC_PROT	4	R	[125:122]
Reserved	–	2	R	[121:120]
Data Read Access-time-1	TAAC	8	R	[119:112]
Data Read Access-time-2 in CLK Cycles (NSAC*100)	NSAC	8	R	[111:104]
Max. Data Transfer Rate	TRAN_SPEED	8	R	[103:96]
Card Command Classes	CCC	12	R	[95:84]
Max. Read Data Block Length	READ_BL_LEN	4	R	[83:80]
Partial Blocks For Read Allowed	READ_BL_PARTIAL	1	R	[79:79]
Write Block Misalignment	WRITE_BLK_MISALIGN	1	R	[78:78]
Read Block Misalignment	READ_BLK_MISALIGN	1	R	[77:77]
DSR Implemented	DSR_IMP	1	R	[76:76]
External V_{PP}	VPROG	2	R	[75:74]
Device Size Mantissa	C_SIZE_MANT	8	R	[73:66]
Device Size Exponent	C_SIZE_EXP	4	R	[65:62]
Max. Read Current @ V_{DD} Min	VDD_R_CURR_MIN	3	R	[61:59]
Max. Read Current @ V_{DD} Max	VDD_R_CURR_MAX	3	R	[58:56]
Max. Write Current @ V_{DD} Min	VDD_W_CURRENT_MIN	3	R	[55:53]
Max. Write Current @ V_{DD} Max	VDD_W_CURRENT_MAX	3	R	[52:50]
Max V_{PP} Current	VPP_CURR	3	R	[49:47]
Erase Sector Size	SECTOR_SIZE	5	R	[46:42]
Erase Group Size	ERASE_GRP_SIZE	5	R	[41:37]
Write Protect Group Size	WP_GRP_SIZE	5	R	[36:32]
Write Protect Group Enable	WP_GRP_ENABLE	1	R	[31:31]
Manufacturer Default ECC	DEFAULT_ECC	2	R	[30:29]
Stream Write Speed Factor	R2W_FACTOR	3	R	[28:26]
Max. Write Data Block Length	WRITE_BL_LEN	4	R	[25:22]
Partial Blocks For Write Allowed	WRITE_BL_PARTIAL	1	R	[21:21]
Reserved	–	5	R	[20:16]
Reserved	–	3	R/W	[15:13]
Copy Flag (OTP)	COPY	1	R/W	[12:12]
Permanent Write Protection	PERM_WRITE_PROTECT	1	R/W	[11:11]
Temporary Write Protection	TMP_WRITE_PROTECT	1	R/W/E	[10:10]
ECC Code	ECC	2	R/W/E	[9:8]
CRC	CRC	7	R/W/E	[7:1]
Not Used, Always '1'	–	1	–	[0:0]

FIG._7
(PRIOR ART)

Name	Available In SPI Mode	Width [Bytes]	Description
CID	Yes	16	Card Identification Data (Serial Number, Manufacturer ID etc.)
RCA	No		
DSR	No		
CSD	Yes	16	Card Specific Data, Information About the Card Operation Conditions.
OCR	No		

FIG._8

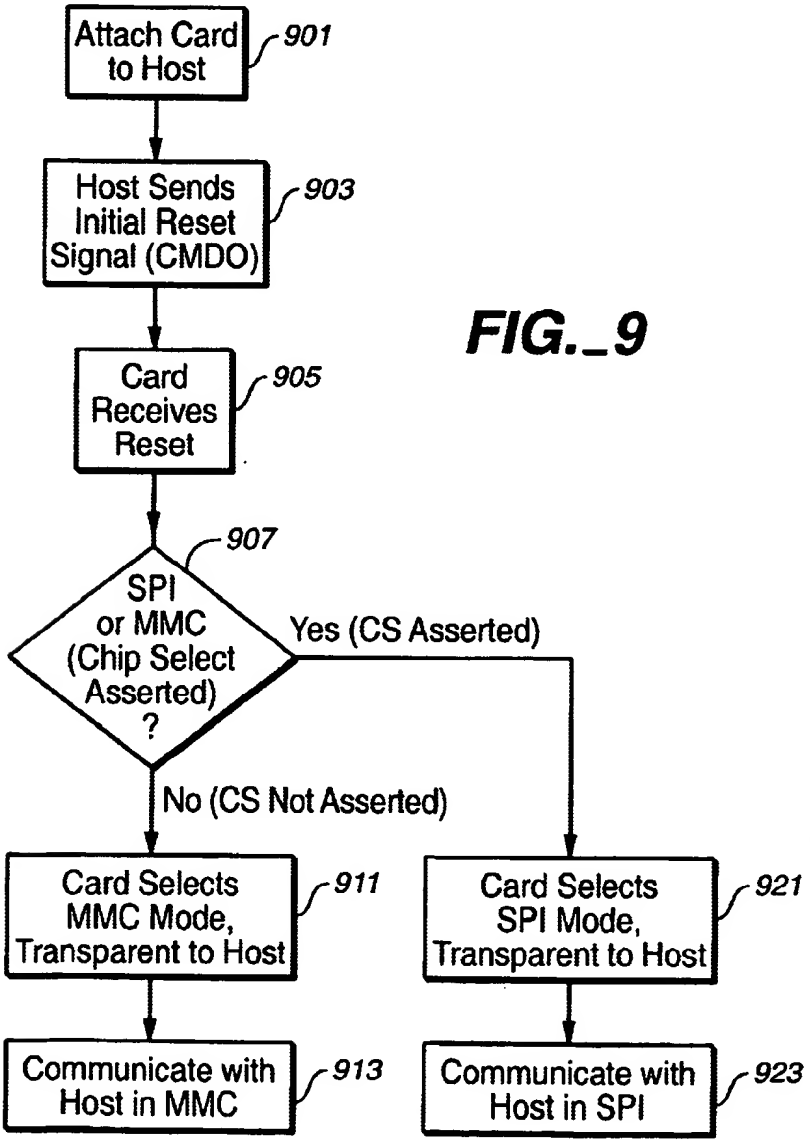

FIG._9